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An Outbreak of Poliomyelitis in Canadian Eskimos in Wintertime

EPIDEMIOLOGICAL FEATURES*

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THE purpose of this paper is to describe the epidemiological features of an epidemic of poliomyelitis amongst the Eskimos, in an area of Canada's Eastern Arctic. This epidemic occurred in mid-winter, attacked an extremely susceptible group of people, and is believed to be one of the most extensive northerly epidemics on record. The area involved may be located (see map) on the northwest coast of Hudson Bay and extends north from Churchill, Manitoba, to Repulse Bay, and west to Baker Lake, Northwest Territories, including Nueltin Lake and the Kazan River district. This area is between 90° to 95° west longitude and 60° to 65° north latitude and covers approximately 40,000 square miles. The total native population in the area is about 800. As paralytic cases are still being reported, and as the full extent of this epidemic is still unknown, the figures in this paper should be considered as provisional, as they include cases reported only up to the end of April, 1949. It is the intention, however, to publish a complete report on all aspects of the epidemic including the clinical, pathological and epidemiological findings as well as the virus studies, when the epidemic has subsided.

Poliomyelitis outbreaks in Arctic regions are not unknown, and the Report of the International Committee refers to 30 prior to 1914. More recently Arne Høygaard (2) describes an epidemic in August-November, 1925, at Angmagssalik, East Greenland, which caused 27 deaths among 800 Eskimos. He also refers to a report of an epidemic in West Greenland by A. Bertelson (3) in

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1935. Hrolv (4) states that poliomyelitis has occurred in Greelnand since 1913, and gives details of an outbreak in 1932.

The present epidemic may best be considered as two separate outbreaks, the first related to, and resulting in, the second. The first outbreak dates back to July, 1948, in the Eskimo Point and Padlei districts, 150 miles north of Churchill, but cases from this source did not gather momentum until October, November and December, 1948. The second outbreak occurred in the district of Chesterfield Inlet where fifty-seven cases occurred between February 14th and March 7th, with other cases at a later date. Although one case of paralytic poliomyelitis developed in an Anglican missionary at Eskimo Point, none of the 25 white inhabitants in the settlement at Chesterfield Inlet became paralyzed. At the time of the outbreak, however, 4 children and 1 adult of the white population at Chesterfield had symptoms of headache, nausea and vomiting, which coincided with similar symptoms amongst native families where paralytic poliomyelitis was occurring.

Because of the seriousness of the situation, two trips were made to Chesterfield Inlet by air; the first on March 2nd, which included a medical team of five doctors; and the second on April 23rd, including four doctors, a physiotherapist, and a nurse. The first trip was chiefly for the purpose of diagnosing and treating the disease as well as to determine the epidemiology of the outbreak and to collect laboratory specimens for diagnostic purposes. The second trip dealt more with treatment and convalescent care of the cases as well as providing an opportunity for gathering additional epidemiological data.

Before discussing the progress of the epidemic, it might be well to mention briefly some of the customs and habits of the Eskimo, some of which probably played their part in facilitating the spread of the disease. The Eskimos live a nomadic life, residing in snow houses or igloos in the winter months and tents in the summer, and travel by dog team or boat depending on the season. They live in camps or communities in very close contact with each other, are constantly visiting among themselves, and often intermarry within a relatively confined family circle. The eating habits of the Eskimo are irregular, and raw meat usually forms a large part of their natural diet. Other food consists chiefly of bannock, hard biscuits, some lard, jam, dried milk and a few other items. Generally speaking, the parents give the children the choicest cuts of meat. Large quantities of tea are often consumed several times a day through the use of a common drinking cup. Cooking is at a minimum and food is consumed by fingers, teeth, and the use of a small curved knife or "ulu". Babies are nursed by the mother until they are two or three years of age or until a new baby is born. The sanitation of the Eskimo is very crude as he has no insight concerning the necessity for proper sanitation or personal hygiene. Excreta are deposited in the anteroom or outside the door of the igloo, and because of this practice the less diligent Eskimos may live within badly soiled igloos or on contaminated ground when the snow melts. It is also not uncommon for the Eskimos to spit in the doorway. Bathing is practically negligible and may be confined to an occasional bath in the warmer weather when the water thaws in the surrounding lakes and rivers.

Meteorological Data

Table I gives the climatic conditions at the peak of the epidemic, along with the mean temperatures for the same period of the year. It will be noted that there was an average temperature of –27°F. during the months of January, February, and March.

TABLE I

METEOROLOGICAL DATA, CHESTERFIELD INLET, N.W.T.
1948 - 1949 (January to April)

	High Temp.	Low Temp.	Mean Temp.	Total Precipitation
1948				
January	17°F.	–48°F.	–23°F.	0.1 in.
February	5°	–47°	–31°	
March	16°	–46°	–21°	0.4 in.
April	32°	–32°	– 2°	
May	38°	– 6°	20°	
June	57°	27°	38°	0.3 in.
July	68°	35°	50°	
August	86°	35°	52°	1.6 in.
September	52°	27°	42°	0.2 in.
October	45°	– 3°	26°	0.1 in.
November	34°	–19°	10°	5.1 in.
December	27°	–38°	–14°	0.3 in.
1949				
January	6	–48°	–29°	0.9 in.
February	–21°	–49°	–38°	0.4 in.
Ma ch	18°	–44°	–13°	0.5 in.
April	27°	–26°	5°	0.9 in.

PROGRESS OF THE EPIDEMIC

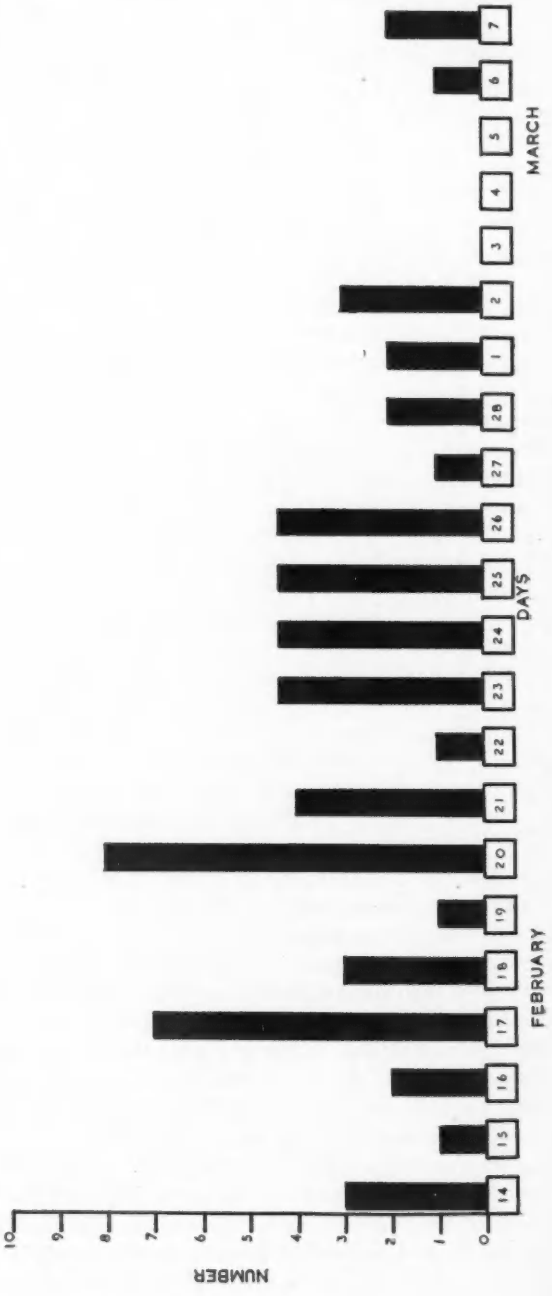
First Outbreak

The first outbreak may be traced back to July, 1948, at which time Arnal Arjuak, an Eskimo, and an Indian Chippewyan girl both developed paralytic poliomyelitis. Both these cases lived just north of Churchill but at separate locations. As other cases in this outbreak did not develop until October, it has only been with some difficulty that the activities of cases or contacts have been traced in the District of Eskimo Point, and this has enabled us to determine fairly accurately the course and progress of the epidemic. Dr. J. P. Moody, Medical Health Officer, and the Royal Canadian Mounted Police constables of this area have been instrumental in securing valid information, often through considerable hazard and personal discomfort.

Early in September, 1948, an Eskimo named "Tutu" (Tick Tock), while returning from Churchill to his home in Pistol Bay, visited many camps en route, in the neighbourhood of Nunella and Eskimo Point. A few weeks later, during the first week of October, 2 cases of paralytic poliomyelitis developed at Nunella and 3 at Eskimo Point, all of which were in camps visited by Tutu.

DIAGRAM I

DISTRIBUTION OF PARALYTIC CASES BY DATE OF ONSET
DISTRICT OF CHESTERFIELD INLET



One of those attacked was an Anglican missionary (white), who had been stationed in this locality for the past two years. One of the victims at Eskimo Point was a special constable named Jimmy Gibbons (native), who three weeks later, although paralyzed in one extremity, proceeded to Padlei, 40 miles northwest, accompanied by an R.C.M.P. constable. During the latter part of December, 7 paralytic cases developed at Padlei including 2 deaths. All of these cases were from camps visited by Jimmy Gibbons. A careful investigation also disclosed that no other travellers besides Gibbons and the R.C.M.P. constable had visited these particular camps in the three weeks prior to the onset of symptoms. This spring, 5 further cases have been unearthed, whose dates of onset are unknown, which makes a total of 12 paralytic cases at Padlei.

Second Outbreak

The second and more extensive outbreak of the epidemic developed at Chesterfield Inlet following the visit of another missionary from Eskimo Point (who apparently had no clinical symptoms of poliomyelitis), who flew to Chesterfield Inlet on the 28th of January, 1949. This man resided at the hospital and visited all the patients in the hospital as well as the inmates of the Industrial Home located at the hospital. He also visited all the white and Eskimo population in the settlement on various occasions, and finally returned to Eskimo Point on February 9, 1949. There is no doubt but that this missionary had visited the poliomyelitis victims at Eskimo Point before his trip to Chesterfield. The first cases began to develop five days after the missionary left Chesterfield Inlet.

In the meantime Dr. J. P. Moody, Medical Health Officer, had returned to Chesterfield Inlet (his headquarters) on February 11, 1949, after a two-month leave of absence. On learning of the outbreak of the as yet undiagnosed disease to the south, he proceeded to Eskimo Point and Padlei on February 13th, little realizing that an epidemic was brewing on his own doorstep. On February 14th, the first case of poliomyelitis developed at Chesterfield Inlet and within 17 days 54 paralytic cases, including 14 deaths, had occurred.

The first paralytic case to develop at Chesterfield Inlet was Special Constable Kolit (native) who did not feel well on Monday, February 14th, and was sent back to his igloo. The week before, other members of his family had been mildly ill but were not confined to bed. By the end of the week Kolit's left leg was very weak and he was unable to bear any weight.

On Sunday, February 20th, the seriousness of the situation was brought to a dramatic climax when a young married woman, who was an inmate of the Industrial Home at Chesterfield, and an eight-year old boy, collapsed in church. On the same afternoon an old Eskimo named Angote was said to be in grave danger. That evening Dr. Moody was contacted by wireless at Tavane, and he arranged to fly back the following morning. During the night the 3 cases mentioned above died. This fulminating characteristic of the disease was fairly representative of most of the deaths, all of which occurred as a result of respiratory paralysis. To my knowledge there were no cases of cranial nerve involvement. Realizing that the settlement at Chesterfield Inlet was the centre

DIAGRAM 2

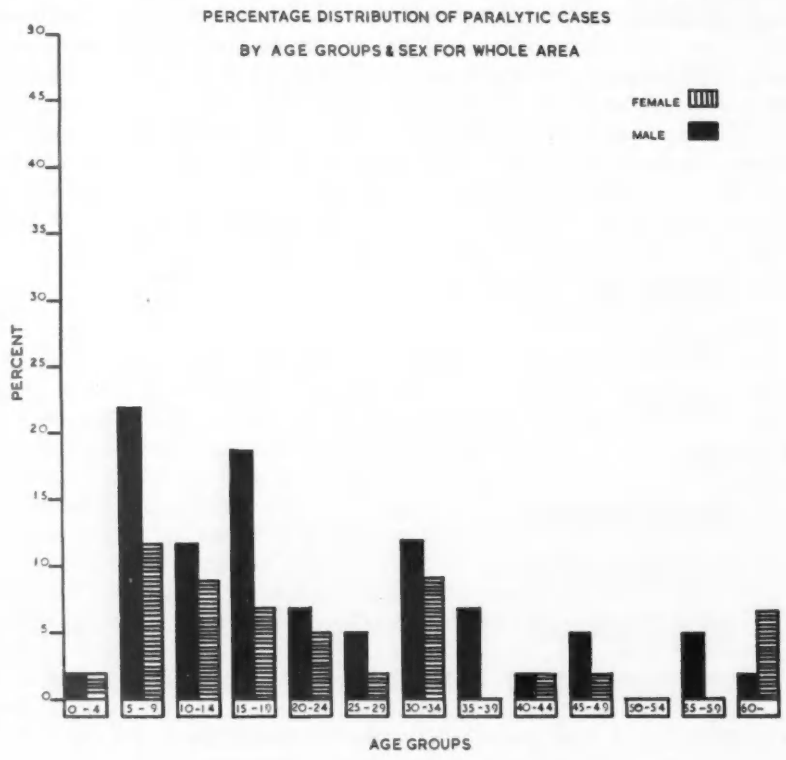


TABLE II

PERCENTAGE DISTRIBUTION OF CASES AND DEATHS IN THE POPULATION BY AGE GROUPS
DISTRICT OF CHESTERFIELD INLET

Age Groups	Population	Cases	Percent.	Deaths	Percent.
0-4	53	2	4	0	
5-9	56	13	23	1	2
10-14	33	8	25	3	9
15-19	26	11	42	3	12
20-24	18	4	22	0	
25-29	12	2	16	0	
30-34	24	6	25	2	8
35-39	9	1	11	0	
40-44	10	2	20	0	
45-49	9	3	33	2	22
50-54	4	0	0	0	
55-59	8	2	25	2	25
60-	13	3	23	1	8
TOTAL	275	57		14	

and source of infection in this epidemic, an investigation disclosed that from February 1st to 14th, 21 natives had visited the settlement with at least one representative from almost every camp in the district. As a result of this general contact with the settlement, cases began to develop both in Chesterfield and the surrounding district at approximately the same time. Because of the larger number of families congregated at Chesterfield Inlet than was usual for this time of year, the greater proportion of cases occurred in the settlement itself, with approximately 20 per cent of all cases in the district amongst the hospital patients and inmates of the Industrial Home. Some of the cases included tuberculous patients and others who had been in the hospital for several months' duration.

Case Histories

The following case histories may be considered fairly typical of the development and spread of this outbreak.

Case 1, Akearok, a boy age 10, who lived with his family 35 miles from Chesterfield. His family had no contact with other natives for some months. On February 11th, his father visited the settlement and secured supplies through the family allowance credits, returning to camp on the following day. On February 22nd Akearok died in paralysis in his father's igloo.

Case 2, Kau and Igviksak, two girls ages 11 and 14, lived up the Inlet, 15 miles from the settlement. There were frequent visits from various individuals from the camp to the settlement and possibly by the individuals themselves. On February 23rd (9 days after the first case), Kau died in camp. On February 25th, Igviksak was brought in to the hospital with widespread paralysis and died on February 27th.

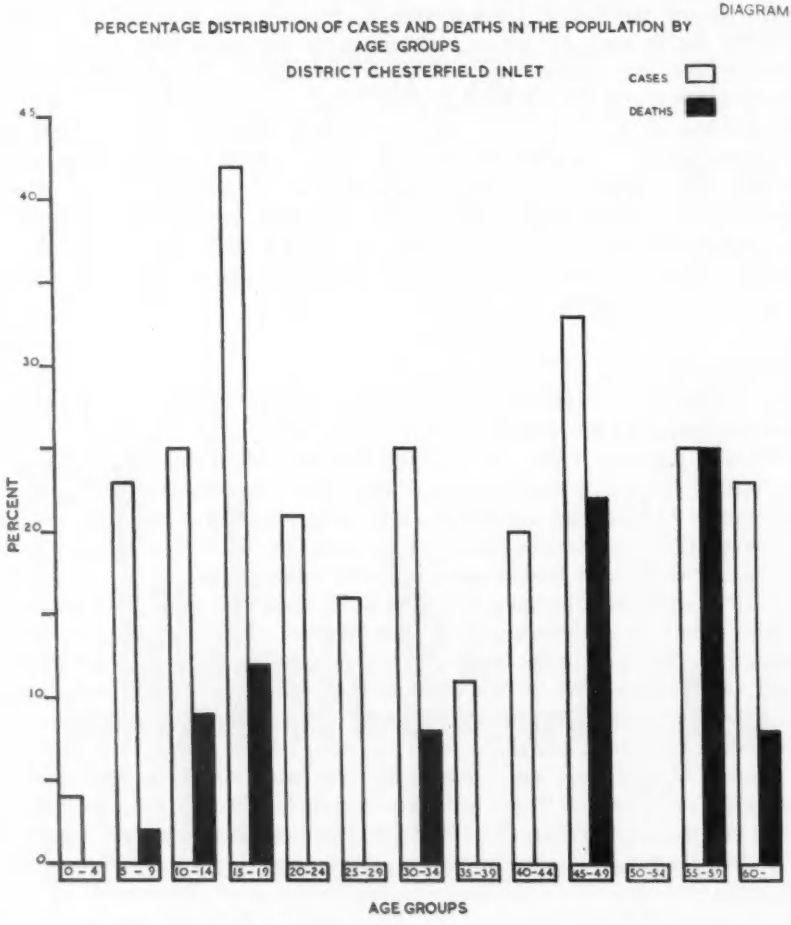
Case 3, Kappi, male, age 33, lived 50 miles north of Chesterfield in the camp with twenty others. There had been no contact with any other camp for several months. On February 10th his brother and Akralayuk, a male relative, age 26, left the camp to visit Chesterfield. On February 13th they returned to their camp just prior to the discovery of the first cases at Chesterfield. Kappi died on March 2nd, with paralysis, not more than 15 days after the infection was first brought into the camp. Akralayuk also developed paralysis and almost all of the members in the camp had symptoms, four of whom now have residual paralysis.

Distribution of Cases and Deaths

Diagram 1 gives the dates of onset of paralytic cases at Chesterfield Inlet and indicates the explosive character of the outbreak. During the period from February 14th to March 7th, 57 cases, including 14 deaths, were reported.

Diagram 2 shows the percentage distribution of cases by age groups in the whole area. This indicates that those between the ages of 5 to 20 years were chiefly involved. However, when one examines the percentage distribution of cases and deaths of the same age groups, by population, as shown in Table II and Diagram 3, there is a relatively even distribution of cases in all age groups.

DIAGRAM 3



This suggests an absence of immunity in the whole population. Deaths, however, are most marked in the age groups of 45-49 and 55-59.

Table III gives the distribution of poliomyelitis cases in 15 selected families in Chesterfield Inlet and the surrounding district. It is noted that four families had 2 cases of paralysis, in 3 there were 3 paralytic cases, and 1 family had 4 paralyzed victims. This indicates that, as well as mild clinical cases developing amongst family members, more than one paralytic case per family may be common in a susceptible population.

Table IV and Diagram 4 show an extremely high case rate of 185 per 1,000 population, as compared with the Ontario and Manitoba epidemics of 1937 and 1941. That is, of the 275 Eskimos in the District of Chesterfield Inlet, 18.5 per cent of the population were paralyzed, and approximately 5 per cent of

TABLE III

DISTRIBUTION OF PARALYTIC POLIOMYELITIS IN FIFTEEN SELECTED FAMILIES AND IN THE HOSPITAL AT CHESTERFIELD INLET

Location	No. in Family	Cases of Paralytic Polio.	Deaths
Chesterfield	4	2	1
Chesterfield	3	1	1
Chesterfield	6	3	1
Chesterfield	5	2	
Chesterfield	2	1	1
Chesterfield	5	1	
Chesterfield	5	1	
Chesterfield	7	3	1
Chesterfield	3	1	1
Chesterfield	4	2	
50 Miles N.E.	5	1	1
25-40 Mi. N.W.	10	4	2
25-40 Mi. N.W.	9	3	
25-40 Mi. N.W.	4		
25-40 Mi. N.W.	6	2	1
Hospital	25	10	3

TABLE IV

A COMPARISON OF CASE AND CASE FATALITY RATES OF DISTRICT OF CHESTERFIELD INLET WITH THE ONTARIO EPIDEMIC OF 1937 AND MANITOBA EPIDEMIC OF 1941

Location	Case Rate per 1,000 Population	Case Fatality Rate(%)
Chesterfeld Inlet, Apr. 1949	185*	27.4
Ontario 1937	0.683†	4.3
Manitoba 1941	1.13†	1.8

*Paralyzed cases only.

†Paralyzed and non-paralyzed cases.

the population died of the disease. These figures may be contrasted with rates for the whole area including 800 natives, which give a case rate of 84 per 1,000 and a mortality rate of over 2 per cent of the population. The total morbidity is not known as it is not possible to locate, examine, and question all Eskimos in the area. However, a conservative estimate would indicate that at least 50 per cent of the population had mild symptoms which were likely attributable to the poliomyelitis virus.

Control Methods

On February 20, 1949, Dr. J. P. Moody, Medical Health Officer, placed the entire area outlined above under quarantine and requested further assistance

GEOGRAPHICAL LOCATION
POLIO EPIDEMIC AT CHESTERFIELD INLET
1949

from the Indian Health Services of the Department of National Health and Welfare in combatting the epidemic. Radio messages were then sent to all R.C.M.P. detachments and others with authority in the Eastern Arctic, outlining the quarantine area and giving instructions for restriction in travel. Following the diagnosis of poliomyelitis, written instructions in syllabics (the Eskimo written language) have been distributed to the Eskimos in the area, warning them to restrict their travel, and to avoid other camps, particularly where there has been any sickness. Arrangements have also been made in some sectors for Eskimo camps to trade at Hudson's Bay Posts in rotation, in order to avoid contact with others. In some instances signs in Eskimo syllabics have been placed at the entrance to settlements warning travellers of the dangers of entering the settlement. Activities of trading companies, mining companies and others have also been curtailed in the area unless special authority has been granted. At the present time a tentative period of six months' quarantine is in effect, the lifting of which will depend on the further spread of the epidemic.

One wonders how much value these control measures will be in view of the fatalistic and apathetic attitude of the Eskimo to illness, and his inability to understand the cause and spread of disease. However, a serious socio-economic and rehabilitation problem threatens those Eskimos who have become victims of poliomyelitis and, therefore, a concerted effort is being made by those concerned in an attempt to prevent further spread of the disease. It is only because of the very realistic approach of those in the north country in dealing with the problem, including the Medical Health Officer, Royal Canadian Mounted Police constables, Hudson's Bay Company and church representatives, that we have hopes that some worthwhile results may come from these restrictions.

Virus Isolation

During the visits to Chesterfield Inlet on March 2nd and April 23rd, a number of laboratory specimens were obtained including autopsy material, sera, throat washings and stool specimens. Monkeys were inoculated with the material collected in March by Dr. A. J. Rhodes of the Connaught Medical Research Laboratories, and out of the 7 specimens tested, 5 produced typical paralysis in the animals, which were subsequently autopsied. A diagnosis of poliomyelitis was confirmed by histological examination of the monkey material made by Dr. W. L. Donohue, Department of Pathology, Hospital for Sick Children, Toronto. Of the five positive isolations, 2 were from brain and nerve tissue, 2 from stools and 1 from throat washings. The full details are separately reported in this issue.

Discussion

Because of the natural inability of Eskimos to think accurately in terms of time, some leeway must be allowed for the exact dates of onset of some of the cases. However, the number and sequence of the cases as they occurred may be considered accurate. Although influenza epidemics have been reported in this area in the past—e.g. 1946, with 120 cases and no deaths—and the usual

coryza and colds go the rounds each year, apparently the population had little immunity to the poliomyelitis virus. As th epidemic progressed and gathered momentum, the virus also appeared to become more virulent as indicated by a greater number of paralytic cases and deaths in the second outbreak than the first. There also appeared to be a greater distribution of male than female cases. Although more cases developed under 30 years of age than over 30, i.e. 45 (67 per cent) as compared to 22 (33 per cent), when cases were applied to the population of Chesterfield Inlet by each age group, the distribution was relatively uniform for all ages in this district. (See Table II and Diagram 3.) This may be contrasted to poliomyelitis epidemics elsewhere which have reported a preponderance of cases under 15 years of age (5, 6). It is also of note that the case incidence or attack rate in the population at Chesterfield is extremely high when one considers that more than 18 per cent or 185 per 1,000 population had paralytic poliomyelitis with a mortality rate of 5 per cent, and a case fatality rate of 27.4 per cent. The figures for the whole area of the epidemic are also high, with a case rate of 84 per 1,000 and a mortality rate of 2 per cent. The full significance of the rates may best be seen when compared with the Ontario epidemic of 1937 and Manitoba of 1941, which gave attack rates of 0.683 and 1.13 per 1,000, and case fatality rates of 4.3 per cent and 1.8 per cent respectively (7, 8).

This epidemic also demonstrates that poliomyelitis is capable of appearing in epidemic proportions even under extremely cold climatic conditions; and suggests that the immunity of the population is probably a more important factor in the control of poliomyelitis than climatic changes. In the same way flies would not appear to be an essential vector in the spread of the disease. The close proximity in which the Eskimos live in families and camps, along with their almost total lack of sanitation and personal hygiene, would appear to be a factor in facilitating the spread of the disease. The isolation of the virus from stools and throat washings, confirms present knowledge of poliomyelitis, and suggests that infection may spread from person to person from either of these sources.

An epidemic of poliomyelitis amongst an Eskimo population presents a serious socio-economic and rehabilitation problem for those responsible for their health and welfare, as individuals who are unable to hunt, fish or fend for themselves in what is normally a severe and hazardous climate, would find it difficult to survive without government aid.

Summary

1. The epidemiological features of a severe epidemic amongst an Eskimo population of 800 have been described; the epidemic involved an area of 40,000 square miles in the Northwest Territories of Canada.
2. As paralytic cases are still being located, the full extent of the epidemic has not yet been determined.
3. The distribution of cases and deaths has been described and comparisons have been made with epidemics in Ontario, 1937, and Manitoba, 1941, A fairly uniform distribution of paralytic cases was noted in all age groups.

4. The difficulties of quarantine and control measures in an Arctic region have been discussed.
5. The poliomyelitis virus has been isolated by monkey inoculation from five separate cases, and details are furnished in a separate report.
6. A composite report will be prepared at a future date to include the clinical, pathological and epidemiological aspects of the epidemic as well as the virus studies.

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An Outbreak of Poliomyelitis in Canadian Eskimos in Wintertime

LABORATORY INVESTIGATIONS*

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Technical Methods

SEVERAL pathological specimens were obtained from Eskimos involved in an epidemic of poliomyelitis at Chesterfield Inlet which has been described elsewhere. The specimens were shipped by aeroplane in the frozen state, and were received in good condition; they were stored in the carbon dioxide ice chest until the time of examination. Some nervous tissue was also received in glycerol, and this was stored in the cold room.

It was decided to examine sufficient specimens by monkey inoculation to confirm the clinical diagnosis of poliomyelitis beyond reasonable doubt. Accordingly, the following 7 samples were selected as most suitable: preparations of brain and cord from 2 cases; stools from 3 cases; and throat washings from 2 cases.

Nervous tissue was prepared for inoculation by grinding in a mortar to constitute a 20 per cent suspension in broth. Penicillin (1,000 units per ml) and streptomycin (5 mg. per ml) were added, and the inoculations performed in rhesus monkeys by the cerebral route; the suspension was allowed to stand at room temperature for about 30 minutes before inoculation, to allow the antibiotics to act.

Bacteria-free extracts of 2 of the stool samples were prepared by shaking repeatedly with ether, without concentration of the contained virus. In the third case, virus in an aqueous suspension of stool was concentrated in the ultracentrifuge at approximately 39,000 r.p.m. Inoculations were made cerebrally and peritoneally in rhesus monkeys.

The throat washings were treated with penicillin and streptomycin without concentration of the virus, and inoculated cerebrally and peritoneally.

Monkeys were examined daily, and were killed when paralysis developed. Monkeys that did not develop paralysis were killed 4 weeks after inoculation. All animals were examined histologically.

*Aided by a grant from the Department of National Health and Welfare, Ottawa.
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Results

The results are shown in the table, from which it will be seen that poliomyelitis virus causing typical clinical and histological appearances in rhesus monkeys was recovered from both preparations of autopsy material, 2 out of 3 stools, and 1 out of 2 throat washings tested. Poliomyelitis virus was therefore recovered from 5 out of the 7 patients investigated, and from the usual sites. No detailed attempts have been made to passage these strains in monkeys. However, the nervous tissue from the monkey inoculated with the stool of patient 3-177 was injected into another monkey, which developed paralytic poliomyelitis, histologically typical, after an incubation period of 17 days.

Summary

Poliomyelitis virus, producing typical clinical and histological appearances in rhesus monkeys, was demonstrated in the brain and cord of 2 cases of suspected poliomyelitis involving Eskimos at Chesterfield Inlet, N.W.T., Canada, in the winter of 1949. Virus was also demonstrated in 2 stool preparations, and one sample of throat washings. In all, therefore, the clinical diagnosis of poliomyelitis was confirmed by laboratory tests in 5 Eskimos, and there seems to be no doubt that the epidemic described was in fact one of acute anterior poliomyelitis.

Results of Inoculation of Monkeys with Pathological Material from Eskimos

Eskimo Reference No.	Interval between Onset of Illness and Collection of Specimen	Specimen Tested	Method of Preparation of Inoculum	Route and Quantity of Inoculum	Clinical Manifestations in Monkey	Histological Changes in Monkey
3-56 (18 years) (male)	Died in hospital 5 days after onset. Autopsy 7 days after death	Brain and cord	Grinding; 20% suspension; antibiotics added	Cerebral, 0.8 ml; peritoneal, 1.0 ml	Paralysis of legs, 10 days after inoculation	Typical of poliomyelitis
3-164 (56 years) (male)	Probably a few days only	Brain and cord	as for 3-56	Cerebral, 1.0 ml	Pre-paralytic phase developed 3 weeks after inoculation; killed in this phase	Typical of poliomyelitis
3-213 (18 years) (male)	4 days	Stool	Etherization	Cerebral, 0.8 ml; peritoneal, 30 ml	Paralysis of legs, 12 days after inoculation	Typical of poliomyelitis
3-177 (11 years) (male)	6 days	Stool	High speed centrifugation	Cerebral, 1.0 ml	Paralysis of legs, 5 days after inoculation	Typical of poliomyelitis
3-55 (31 years) (female)	4 days	Stool	Etherization	Cerebral, 0.8 ml; peritoneal, 65 ml	No illness	No lesions
3-227 (46 years) (male)	3 days	Throat washings	Antibiotics added	Cerebral, 0.8 ml; peritoneal, 8 ml	Pre-paralytic phase developed 26 days after inoculation; killed in this phase	Typical of poliomyelitis
3-233 (7 years) (female)	5 days	Throat washings	as for 3-227	Cerebral, 0.8 ml; peritoneal, 20 ml	No illness	No lesions

A New Dietary Standard for Canada, 1949

CANADIAN COUNCIL ON NUTRITION
OTTAWA, ONTARIO

AFTER two years of study by the Canadian Council on Nutrition, a new dietary standard for Canada was approved in December, 1948. The Canadian Council on Nutrition was appointed in 1937 and serves in an advisory capacity to the Minister of National Health and Welfare of the Dominion Government.

This new standard replaces previous ones adopted in 1939, 1942 and 1945 by the Council. It will be published in English and French with suitable charts, tables and references as Volume 2, Number 1 (1949), of the Canadian Bulletin on Nutrition. This bulletin may be obtained from the King's Printer, Ottawa, for the sum of $1.00 per copy. The full statement of the standard should be consulted for a proper understanding of the new basis used in its development. However, the following notes and tables have been abstracted from the original to serve as an introduction for those who may use such standards in their work.

Use

The standard is intended to be used (1) as a scientific basis for planning food supplies for individuals or groups, except where clinical observations and tests have established particular or special food requirements; (2) to assess the amount of each nutrient provided by a diet in terms of probable physiological requirements; and (3) to indicate a "nutritional floor" beneath which the maintenance of health in people cannot be assumed.

Basis

The standard is based on amounts actually ingested; that is, on edible portions corrected for losses during cooking and serving. The ingestion of *more* of a nutrient than serves a clear physiological purpose is undesirable in the face of a world scarcity of food, and may even be harmful to the individual in certain circumstances. "More" is not necessarily "better" in nutrition, and excess ingestion of nutrients should not be confused with an adequately nourished state such as is sometimes referred to as "optimal nutrition".

For the first time in human dietary standards, the concept of "body size" has been fully developed. This helps to avoid the use of figures representing the highest requirement that any individual might have, since the chief cause of the common observation that one individual's dietary needs are different from another's is the variation in metabolic body size. Further, no extra allowance is made for "margins of safety" or similar adjustments which are based more on opinions than on physiological observations.

Both of these procedures tend to result in some figures that appear to be lower than some previously employed, but the differences are primarily in the basic calculations rather than arising from alternative data. The same lack of clearly established data pervades all tables expressing dietary needs, and alterations will probably have to be made in such figures from time to time.

In Tables I and II the new standard is expressed for adults and juveniles according to the degree of activity and to body weight.

TABLE I

CANADIAN DIETARY STANDARD FOR GIRLS AND BOYS, 1948

(The figures in the table give the maintenance allowances for body weights shown plus additional needs for activity.)

BODY[1] WEIGHT (lbs.) with approximate equivalent age in brackets	Calories	Protein Gm.	Calcium[2] Gm.	Iron Mg.	Vitamin A[3] (as carotene) I.U.	Thiamine Mg.	Riboflavin Mg.	Niacin Mg.	Ascorbic Acid (C) Mg.	Vitamin D I.U.
					GIRLS					
20 (1)	1050	35	1.0	6	700	.30	.50	3.0	30	400–800
30 (3)	1300	37	1.0	6	1000	.40	.65	4.0	30	400
40 (5)	1600	40	1.0	6	1300	.50	.80	5.0	30	400
50 (7)	1800	45	1.0	6	1600	.55	.90	5.5	30	400
60 (9)	2100	50	1.0	6	2000	.65	1.10	6.5	30	400
70 (10)	2300	55	1.0	6	2300	.70	1.15	7.0	30	400
80 (11)	2450	60	1.0	6	2600	.75	1.25	7.5	30	400
90 (12)	2475	70	1.5	6	3000	.75	1.25	7.5	30	400
100 (14)[4]	2500	75	1.5	12	3300	.75	1.25	7.5	30	400
					BOYS					
20 (1)	1050	35	1.0	6	700	.30	.50	3.0	30	400–800
30 (3)	1300	37	1.0	6	1000	.40	.65	4.0	30	400
40 (5)	1600	40	1.0	6	1300	.50	.80	5.0	30	400
50 (7)	1850	45	1.0	6	1600	.55	.90	5.5	30	400
60 (9)	2180	50	1.0	6	2000	.65	1.10	6.5	30	400
70 (10)	2300	55	1.0	6	2300	.70	1.15	7.0	30	400
80 (12)	2500	60	1.0	6	2600	.75	1.25	7.5	30	400
90 (13)	2650	65	1.5	12	3000	.80	1.30	8.0	30	400
100 (14)	2850	70	1.5	12	3300	.85	1.40	8.5	30	400
110 (15)[4]	3000	80	1.5	12	3600	.90	1.50	9.0	30	400

[1] *Body weight* or size is probably the most important cause of variations in nutrient requirements, but it is recognized that other factors also operate and that not all of the nutrients listed have been shown to vary with body size.

[2] *Calcium*—use these values for phosphorus also.

[3] *Vitamin A* given in terms of carotene; one quarter of these amounts may be used if taken as preformed vitamin A.

[4] *For children* heavier than these weights use adult standards plus an allowance for activity.

SELECTION OF FOODS TO MEET THE DIETARY STANDARD

No single food is complete in itself for all human needs. Canada's Food Rules have served as a guide to the selection of foods which would provide the necessary essential nutrients from day to day. Experience has now indicated

TABLE II

Canadian Dietary Standard for Adults, 1948

(The figures in the table give the maintenance allowances for the body weights shown plus additional needs for activity as indicated.)

Body[1] Weight (lbs.)	Degree of Activity	Calories	Protein Gm.	Calcium[2] Gm.	Iron Mg.	Vitamin A[3] (as carotene) I.U.	Thiamine Mg.	Riboflavin Mg.	Niacin Mg.	Ascorbic Acid (C) Mg.
					WOMEN					
	Sedentary	1625	40	.40	12	2600	.45	.8	4.5	30
90	Moderate	1900	40	.40	12	2600	.55	.9	5.5	30
	Heavy	2400	40	.40	12	2600	.70	1.2	7.0	30
	Sedentary	1825	50	.45	12	3200	.55	.9	5.5	30
100	Moderate	2100	50	.45	12	3200	.65	1.0	6.5	30
	Heavy	2600	50	.45	12	3200	.80	1.3	8.0	30
	Sedentary	2125	55	.55	12	4000	.65	1.0	6.5	30
120	Moderate	2400	55	.55	12	4000	.75	1.1	7.5	30
	Heavy	2900	55	.55	12	4000	.90	1.4	9.0	30
	Sedentary	2325	60	.65	12	4600	.70	1.1	7.0	30
140	Moderate	2600	60	.65	12	4600	.80	1.2	8.0	30
	Heavy	3100	60	.65	12	4600	.95	1.5	9.5	30
	Sedentary	2525	70	.75	12	5300	.75	1.2	7.5	30
160	Moderate	2800	70	.75	12	5300	.85	1.3	8.5	30
	Heavy	3300	70	.75	12	5300	1.00	1.6	10.0	30
In Pregnancy[4] (latter half) add to the maintenance plus work—		up to 500	25	1.0	3	2000	.15	.2	1.5	
In Lactation[4] add to the maintenance plus work		up to 1000	25	1.0	3	2000	.30	.5	3.0	
					MEN					
	Sedentary	1625	40	.40	6	2600	.45	.8	4.5	30
80	Moderate	2150	40	.40	6	2600	.60	1.1	6.0	30
	Heavy	2900	40	.40	6	2600	.85	1.4	8.5	30
	Very heavy	3900	40	.40	6	2600	1.15	1.9	11.5	30
	Sedentary	1825	50	.45	6	3200	.55	.9	5.5	30
100	Moderate	2350	50	.45	6	3200	.70	1.2	7.0	30
	Heavy	3100	50	.45	6	3200	.95	1.5	9.5	30
	Very heavy	4100	50	.45	6	3200	1.25	2.0	12.5	30
	Sedentary	2125	55	.55	6	4000	.65	1.0	6.5	30
120	Moderate	2650	55	.55	6	4000	.80	1.3	8.0	30
	Heavy	3400	55	.55	6	4000	1.05	1.6	10.5	30
	Very heavy	4400	55	.55	6	4000	1.35	2.1	13.5	30
	Sedentary	2325	60	.65	6	4600	.70	1.1	7.0	30
140	Moderate	2850	60	.65	6	4600	.85	1.4	8.5	30
	Heavy	3600	60	.65	6	4600	1.10	1.7	11.0	30
	Very heavy	4600	60	.65	6	4600	1.40	2.2	14.0	30
	Sedentary	2525	70	.75	6	5300	.75	1.2	7.5	30
160	Moderate	3050	70	.75	6	5300	.90	1.5	9.0	30
	Heavy	3800	70	.75	6	5300	1.15	1.8	11.5	30
	Very heavy	4800	70	.75	6	5300	1.45	2.3	14.5	30
	Sedentary	2725	75	.80	6	5900	.80	1.3	8.0	30
180	Moderate	3250	75	.80	6	5900	.95	1.6	9.5	30
	Heavy	4000	75	.80	6	5900	1.20	1.9	12.0	30
	Very heavy	5000	75	.80	6	5900	1.50	2.4	15.0	30
	Sedentary	2925	80	.90	6	6600	.85	1.4	8.5	30
200	Moderate	3450	80	.90	6	6600	1.00	1.7	10.0	30
	Heavy	4200	80	.90	6	6600	1.25	2.0	12.5	30
	Very heavy	5200	80	.90	6	6600	1.55	2.5	15.5	30

[1] *Body weight* or size is probably the most important cause of variations in nutrient requirements, but it is recognized that other factors also operate and that not all of the nutrients listed have been shown to vary with body size.

[2] *Calcium*—use these values for phosphorus also.

[3] *Vitamin A* given in terms of carotene; one quarter of these amounts may be used if taken as preformed vitamin A.

[4] *Vitamin D*—at least 400 International Units, is also needed.

that a few changes may be made in the rules adopted in 1944. A selection of foods from the five major groups remains the basis to meet the dietary standard as shown in the calculations applying the rules.

CANADA'S FOOD RULES

These foods are good to eat.
Eat them every day for health.
Have at least three meals each day.

1. MILK—Children (up to about 12 years): *at least* 1 pint.
   Adolescents: *at least* 1½ pints.
   Adults: *at least* ½ pint.
2. FRUIT—One serving of citrus fruit or tomatoes or their juices; and
   One serving of other fruit.
3. VEGETABLES—*At least* one serving of potatoes; and *at least* two servings of other vegetables, preferably leafy, green or yellow and frequently raw.
4. CEREALS and BREAD—One serving of whole grain cereal, and at least four slices of bread (with butter or fortified margarine).
5. MEAT and FISH—One serving of meat, fish, poultry, or meat alternates such as dried beans, eggs or cheese.
   Use LIVER frequently.

In addition:

EGGS and CHEESE at least three times a week each.

VITAMIN D—At least 400 International Units daily for all growing persons and expectant and nursing mothers.

IODIZED SALT is recommended.

MILK—The milk figures have been clarified by introducing a category for younger children. This was requested by numerous doctors and nutritionists. The old minimum level of 1½ pints daily for older children is retained, but no maximum is given, because instances were reported of adolescents being limited in their milk intake as a result of the previous statement. For the same reason the old minimum of ½ pint daily for adults has been used without the limiting effect of a top figure of one pint. Surveys show that as many as 30 per cent of Canadian people in each of these categories do not yet achieve the minima here expressed.

BREAD—The new Food Rules refer simply to four slices of bread, without comment as to kind. Four slices are mentioned because that is at or above the average bread consumption in Canada at present and thus represents a reasonable goal. *The kind of bread is still important nutritionally,* but only in the way described by the Canadian Council on Nutrition at various times in the past. The following extracts from a Council statement in 1944 echo some made in 1941, and still fit the discussion in 1949 on this point:

"There is no substitute for a good diet of ordinary foods."

"The Council believes that when staple foodstuffs for any reason are nutritionally inadequate, encouragement should be given to improving their nutritional quality by whatever means are most sound from the standpoint of nutrition and economy. Since there is evidence that proper use of natural foods is more dependable for general health than

A SUGGESTED MENU PATTERN
FOLLOWING CANADA'S FOOD RULES

	Breakfast	*Lunch or Supper*	*Dinner*
Monday	Citrus fruit[1] Cereal[2] Buttered toast Beverage[3]	Egg sandwiches Raw vegetable Ice cream Beverage[3]	Meat Potatoes Green vegetable[4] Fruit tart Beverage[3]
Tuesday	Fruit[5] Cereal[2] Buttered toast Beverage[3]	Cheese dish Buttered toast Raw vegetable Citrus fruit[1] Beverage[3]	Meat Potatoes Yellow vegetable[6] Milk pudding Beverage[3]
Wednesday	Citrus fruit[1] Cereal[2] Buttered toast Beverage[3]	Milk soup Fruit[5] Bran muffins Beverage[3]	Meat alternate[7] Potatoes Two vegetables Dessert Beverage[3]
Thursday	Citrus fruit[1] Cereal[2] Buttered toast Beverage[3]	Cheese sandwiches Raw vegetable Fruit[5] Beverage[3]	Liver Potatoes Yellow vegetable[6] Dessert Beverage[3]
Friday	Fruit[5] Cereal[2] Buttered toast Beverage[3]	Eggs Bread and Butter Tomato Cake Cocoa	Fish Potatoes Two vegetables Desert Beverage[3]
Saturday	Citrus fruit juice[1] Cereal[2] Buttered toast Beverage[3]	Soup Meat sandwich Raw vegetable Beverage[3]	Meat alternate[7] Potatoes Green vegetable[4] Fruit salad Cookies Beverage[3]
Sunday	Citrus fruit[1] Bacon and egg Buttered toast Beverage[3]	Cottage cheese Salad greens[4] Whole wheat muffins Fruit[5] Beverage[3]	Meat Potatoes Vegetable Milk pudding Beverage[3]

[1]Orange or grapefruit. Tomatoes, tomato juice or vitaminized apple juice may be used as alternates.

[2]Cooked—rolled oats, cracked wheat or similar cereal. Ready-to-serve whole-grain breakfast cereals.

[3]Milk for children.

[4]Green beans and peas (canned or fresh), spinach, cabbage, lettuce, beet greens, etc.

[5]Fresh, canned or dried.

[6]Yellow corn, carrots, squash, yellow beans.

[7]Fish, poultry, dried beans or peas, eggs, cheese, peanut butter.

NOTE: Bread and butter may be added as desired. There are many forms of nutritious breads containing such ingredients as milk, wheat germ, whole wheat, rye, soya bean or dried yeast. Extras such as sugar, marmalade and jam, mayonnaise and gravy will add flavour and interest to the meals.

placing reliance on any assembly of chemicals, whether as ingredients of a food or of a pharmaceutical, therefore the Council re-affirms its views that higher extraction of wheat, such as used to make Canada Approved White Flour, is a proper step toward assisting the public in the selection and use of foods for adequate nutrition."

"Partly owing to the rarity and expense of some items, and partly owing to our lack of knowledge at the present time, it is not possible to add to white flour any combination of vitamins which will be the nutritional equivalent of those nutrients which have been lost in milling."

Provided that people follow the amounts and variety suggested by Canada's Food Rules, the kind of bread eaten does not make a significant difference to total nutrient intake. When special situations make following the Food Rules difficult, or when extra insurance is desired, extra nutritional advantage is secured by the use of whole-wheat or longer-extraction flours, or flours with nutritional values that approximate the whole-grain levels by virtue of added substances such as milk, wheat germ, dried yeast, soy beans or a variety of vitamins. Nutritionists will continue to state the undisputed fact that whole wheat is nutritionally superior to ordinary white flour or bread, but will be able to continue as in recent years to emphasize the need for all people, especially including those on public assistance or in institutions, to get the variety of food represented by Canada's Food Rules.

Sweet Foods—Canada's Food Rules do not specifically mention sugar or sweet foods but any practical menu must satisfy the need for extra calories and the popularity of sweet foods by including them. Sweet foods, including sugar itself in any form, honey, molasses, cookies, cakes, pastries and soft drinks, have two *undesirable* effects and should be kept at a minimum. (1) Sweet foods tend to satisfy the appetite before people have eaten enough protective foods; this is especially true of all between-meal sweets, and can lead to definite malnutrition. (2) High levels of sweets are associated with severe decay of the teeth. The teeth should be cleaned well *after eating or drinking* a sugary food. In discouraging the use of sweet foods a positive approach could well include mentioning the need to get everything in Canada's Food Rules before indulgence in sweets.

What Each Food Group Contributes Per Day (Average)

Menus similar to the above pattern were set up for two-week periods at different seasons of the year and calculated in terms of nutrients for adults, adolescents and children. The results were expressed as daily averages (not necessarily the analysis for any particular day).

Table III below gives these daily averages for a summer menu on the basis of servings appropriate for a sedentary man weighing 160 lbs.

TABLE III

Food	Calories	Protein gm.	Calcium gm.	Iron gm.	Vit. A I.U.	Thiamine mg.	Riboflavin mg.	Niacin mg.	Ascorbic Acid mg.
Milk ½ pint	191	10.3	.348	.3	475	.12	.50	.3	3
Citrus fruit or tomato, 1 daily	30	.7	.018	.5	518	.06	.05	.4	32
Other fruit 1 daily	62	.7	.019	.6	282	.04	.05	.3	18
Potatoes once daily	162	4.1	.016	1.4	45	.20	.07	2.3	32
Other vegetables twice daily	52	2.5	.058	1.2	4554	.10	.11	.7	28
W. G. cereal 1 daily	100	3.3	.012	1.2	—	.12	.03	.8	—
Bread 4 slices daily	318	11.2	.036	1.1	—	.07	.07	1.4	—
Butter or margarine (on bread)	232	.2	.005	.1	1069	—	—	—	—
Meat and alternates (liver once every 2 weeks)	453	25.8	.023	4.7	1956	.43	.53	9.6	3
Eggs (3 weekly) Av.	34	2.7	.011	.6	238	.02	.07	—	—
Cheese (3 times weekly) Av.	56	3.4	.124	.1	246	.01	.07	—	—
DAILY TOTAL	1690	64.9	.670	11.8	9383	1.17	1.55	15.8	116
Extras provided on daily menu (Av.)	820	7.3	.038	1.5	—	.17	.06	1.3	—
TOTAL (as in menu)	2510	72.2	.708	13.3	9383	1.34	1.61	17.1	116
DAILY REQUIREMENT (Sedentary Man, 160 lbs.)	2525	70	.75	6	5300	.75	1.2	7.5	30

The Progress and Promise of the National Health Program

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ALTHOUGH it is only a little over a year since the National Health Program was announced, it is already abundantly clear that the drive to better health conditions everywhere in the Dominion is rapidly gathering momentum. Against a background of solid, if slow and often erratic, plodding to the goals we had attained in public health, new light and new hope have been kindled.

In the seven months of the fiscal year 1948-49 over fifteen millions of dollars was allocated for projects submitted by the Provinces. This was over 51 per cent of the total funds available. Of this, over seven and three quarter millions of dollars was actually spent, which represents nearly 26 per cent of the total grants available. Besides this, another seven hundred and fifty thousand dollars has been committed for equipment which could not be delivered before March 31st, the end of the fiscal year. This sum, we expect, will be revoted when Parliament reconvenes.

The Tuberculosis Program has made the best showing. Nearly 95 per cent of the total funds available was allocated to the provinces and over 86 per cent was actually spent—a really remarkable achievement. Approximately one-half of this was for equipment for the case-finding program, such as mobile clinics and special equipment for chest-plating patients admitted to general hospitals. Large sums were also spent for equipping new sanatoria being erected. The Province of Quebec made the best showing under this Grant, expending 99.9 per cent of the money available to them.

Here is a bald enumeration of what we have done. First, though, I ask you to bear in mind that the facts and figures I am about to give you are already out of date; projects are flowing in so fast that it is impossible to keep track statistically and factually of the whole field of the campaign, right down to the very last manoeuvre. These are the highlights in the round-up of progress under the National Health Program:

Province-wide health surveys have been launched in all ten provinces.
More than 1,000 provincial health projects have already been approved.
A corps of over 600 health workers has been or is being trained.
Equipment has been provided to make possible at least 2,500,000 more chest X-rays per year.
Sums totalling more than $190,000 of the $205,000 available this year have been invested in public health research projects.

Presented by Dr. Jackson in the absence of the scheduled speaker, the Honourable Paul Martin, Minister of National Health and Welfare, at a luncheon session held during the thirty-seventh annual meting of the Canadian Public Health Association, held in the Nova Scotian Hotel, Halifax, June 27-30, 1949.

More care is being provided for crippled children.
Campaigns against cancer, tuberculosis, venereal diseases, and mental illnesses have been reinforced.
Federal aid has assisted in the building of hospitals to provide 11,760 new beds.

An encouraging picture, you will agree. And, let me remind you, it is far from the complete story.

As leaders in the public health field, members of this Association, I am sure, have read with interest, and sometimes I am told with dismay, the numerous and frequent announcements by the cooperating governments concerning specific projects approved under the Health Plan. Further to answer the question: What has the plan accomplished?—I think it may be appropriate to consider generally the types of undertakings which the federal grants have inspired.

If you look at the variety of the grants provided, you will see that the provinces have been given plenty of scope for the exercise of ingenuity and initiative on every sector of the health front. Where the provinces already had certain well-established programs—such as those for the control of venereal disease, mental illness and tuberculosis—they have been given the added support of extra funds for such work. Again, where they had plans made, or in process of completion, for definite action—as in the campaigns against cancer, crippling conditions in children, etc.—they have been enabled, by virtue of special grants, to put these programs into operation on a comprehensive scale.

The program is providing special financial assistance to increase the tempo and scope of health research. It is stepping up the training of health specialists, providing, under the Professional Training and other Grants, courses for public health doctors, dentists, nurses, laboratory technicians, mental hospital attendants, sanitarians, research workers, psychiatrists, and specialists in many fields.

In this connection, a notable training project is being carried on in Ontario, where a substantial sum of money has been made available to the University of Toronto for the instruction of mental health personnel. Another project for postgraduate training in clinical psychology, bacteriology and preventive medicine is under way at the University of British Columbia; and here in the Maritimes the provinces have joined in a special mental health training program at Dalhousie University, as well as establishing a new school for the training of public health nurses.

Under the General Public Health Grant, many provinces are extending laboratory facilities by the purchase of new and improved apparatus, and are expanding local health services, both as to staff and equipment.

With the assistance of these federal funds many very worthwhile projects are now in operation against specific diseases and types of disability. For instance, Quebec is immunizing children against tuberculosis with B.C.G. vaccine, and Saskatchewan is extending immunization for diphtheria to outlying districts. Most of the provinces are using the Crippled Children Grant for special services in this field. As an example, in Northern Ontario a new clinic will search out children suffering from crippling conditions, and treatment and

preventive action will be encouraged. Manitoba is developing a rehabilitation program in this field and Saskatchewan is setting up a new provincial health division for crippled children.

The provinces have shown great energy in moving against tuberculosis. Federal aid is making possible the extension of free diagnosis and treatment as well as the acquisition of new staff and equipment for provincial sanatoria. It should be possible, with the new case-finding equipment provided from federal funds, to improve the already excellent record of mass chest-plating in the case-finding program of all the provinces by increasing the yearly number of persons X-rayed in Canada by at least 2,500,000. There are over one and a quarter million hospital admissions a year in the Dominion, and one would hope that, with the new hospital admission X-ray program in effect, ultimately a high percentage of these would be chest-plated.

Canada has good reason to be concerned with the steadily growing number of deaths from cancer. As a result of the Health Program's Cancer Control Grant, provincial programs are being strengthened immeasurably. Free diagnostic clinics are being set up, new therapy equipment is being secured, and every effort is being made to discover cancer in its earliest stages and to direct the patient to properly equipped and well-staffed treatment centres.

One could go on detailing projects of this type in every possible aspect of public health, but suffice it to say that there can be no doubt that the inauguration of the National Health Program has instilled new life into all our health services. On all sides there is evidence of unprecedented activity. Every worker in the health field is being encouraged to redouble his or her efforts; new health workers are being enlisted; present personnel are receiving additional training, and public support and the cooperation of all governments has been achieved.

If any further proof is needed that the program is making headway, it is to be found in the fact that already thousands of new hospital beds have been provided, partially at least, as a result of federal financial backing. The program calls for an outlay of $13,000,000 in cumulative annual grants, for a period of five years, for the express purpose of encouraging hospital construction and of making up an admitted deficit in beds for the care and cure of our sick. From hospital projects already received since the program started, we know that over ninety-three million dollars' worth of hospital construction is either under way or is completed.

All the provinces are taking full advantage of the Hospital Construction Grants. Projects approved cover a wide range of institutions, from large general hospitals and centres for the mentally ill, down to small rural hospitals and nursing stations.

In respect to total funds spent under all the Grants, Prince Edward Island leads, having sent in accounts totalling over 55 per cent of the total funds available to them. British Columbia is next, with expenditures amounting to over 46 per cent of their allotment.

The program continues to expand during the present year. Already we have approved projects for over twelve and one-half millions of dollars. This

includes, of course, most of the projects continuing from last year. So we are nearly as far along in less than three months this year as we were after seven months of the last fiscal year. Under the Hospital Construction Grant we have already allocated six million dollars, nearly three times as much as was spent last year.

This, I think, is ample evidence that we are on the march in public health—convincing evidence that the National Health Program is succeeding beyond the expectations of even the most optimistic of those who formulated this great coordinated attack on sickness and suffering.

Letter from Great Britain

Medical Administration in Great Britain

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WHEN the nation first began to think seriously about its health, some time towards the end of the eighteenth century, there was little appreciation of the contribution which the doctor might make to the planning of particular remedies. Dr. Percival, practising as a general practitioner in Manchester, was amongst the first to show how the principles of medicine might be applied to make his city healthier but, when he suggested a voluntary board of health for the city (1796), he did not then think the appointment of a doctor to be necessary to advise the board on how best to carry out its day-to-day work; or, if he did think of this, he didn't say so. It was not until fifty years later that the practitioners of society, the medical officer of health, first appeared, and it was more than a century before the first medical superintendent of a hospital was appointed.

The evolution of medical administration has been profoundly influenced by the slow awakening of understanding of the problem of health. As the industrial revolution progressed into the nineteenth century and the nation became increasingly alarmed about its health, different aspects of the problem were dealt with piecemeal, largely according to the reforming zeal of men with vision, and social purpose, who brought scandals to the notice of the public; Edwin Chadwick for the poor law (1834), Shaftesbury for the factories (1833). There never was a unified approach to society's health as there has been applied to that of the individual. Individuals have always expected to have their own doctor to cover all aspects of their health; but not so the community, which has been satisfied to have its different organs studied and treated separately; thus, the first medical officers of health (Liverpool in 1847, London the following year, and the whole country in 1872) did not immediately comprehend the whole of their patient's body and mind; nor, in fact, from that day to this have they ever done so. There are several obvious reasons for this. The medical officer of health (as is right in a country that values its liberty) has always acted as an adviser and executive officer of a locally elected body into whose hands parliament places the administration; in his work, himself a creature of statute, he has been circumscribed by the limits superimposed upon local governments by parliament; matters such as the administration of the poor law and the factory laws, which were operated centrally, were, *ipso facto*, largely

removed from his orbit. Under the terms of the Sanitary Officers (Outside London) Regulations, 1935, the medical officer of health of a county has been given a function wide enough to capture the imagination of the most zealous; ('he shall inform himself as far as practicable respecting all matters affecting or likely to affect the public health in the county') but this does not make it possible for him or his authority to play any real part in the services which are outside his statutory orbit; furthermore, the growth of local government, with county councils (1888) superimposed upon the earlier district councils (1872) and municipal corporations (1835), has resulted in the range of practice of many medical officers of health outside county boroughs (1888) being further restricted. It was to remedy some of these defects that the scheme of divisional administration (outlined in my letter of January, 1947) was put into operation in the West Riding. Contrary to the wishes of the Royal Commission on Local Government, which immediately preceded the general appointment of the medical officer of health (1872) outside big cities, he was for the most part originally appointed on a part-time basis. Seventy per cent of the first medical officers of health were appointed in this way and it was not until 1926 that this practice was prohibited in the case of all new appointments; there are today approximately 700 medical officers of health, of whom some 150 continue in a part-time capacity, and all of these are, of course, outside county boroughs and county councils, where whole-time appointments have always been required. Transcending all else in its retarding effect upon the growth of understanding of these great issues has been the concentration of medical teaching upon the individual with little attention to aspects of accepted disciplines, or adoption of new disciplines, which provide the weapons with which to tackle the health of society.

The early development of a Specialist Public Health qualification

Yet training of graduates for public health has been organized under state registration in England since 1886 when the General Medical Council, which was set up in 1858, 'to establish and maintain a register of qualified practitioners', was further required by an amending Act to establish a diploma in public health to provide a special qualification in sanitary science for those registered medical men who wished to become medical officers of health. The idea of public medical administration began much earlier, in 1795 in Scotland, where in Edinburgh University (as a probable outcome of Frank's teaching on the continent) a voluntary course of lectures was given by Professor Duncan. In his memorial to the Patrons of the University upon the need for a chair in this subject, the professor included (as well as the rudiments of vital statistics, occupational hygiene and personal and environmental sanitation) the management of public institutions in which 'many people are collected under the care of the public and hospitals'. The first lectures in England were given by Greenhow in 1856 at St. Thomas's Hospital and in the same year Rumsey in his 'Essays on State Medicine' asked that all candidates for appointment as medical officers of health should be required to furnish proof of having studied (and been examined in)—

> the elements of vital and sanitary statistics; the aetiology of zymotic diseases; climate, locality, soil, water; food and diet of different kinds, their composition and liability to adulteration; clothing, exercise and habitation (all in relation to health and sickness); principles of ventilation and purification; preventive management of epidemiology; protection of persons from disease or infection under various insalubrious conditions; morbid effects of different trades and occupations and the protection of the operatives; and sanitary regulations for aggregated communities in workhouses, schools, factories, prisons, asylums and shops.

This no doubt influenced the newly established General Medical Council, at the time of the passing of the Medical Act, 1858, to ask for power to register a qualification in state medicine. Dublin University (1871) and Cambridge University (1875) offered diploma courses suitable for medical graduates seeking appointment to the boards of health established by the Public Health Act, 1848, and to the new local authorities of 1872. Naturally the contents of the early diplomas bear little resemblance to those of today, for the principles taught have been modified with the growth of ideas upon the subjects which can be applied to community health. Professor Crew, in a fine chapter in 'Modern Trends in Public Health' (Butterworth, 1949), develops this theme under the title 'Social Medicine as an Academic Discipline'. He says the diploma has "always been a vast compendium of a wide variety of disciplines, examples being human and veterinary clinical medicine and surgery, epidemiology, engineering, law, statistics and administration". He shows particularly the latest developments towards a study of society with the addition of specialists in medical and social statistics, social psychology, social anthropology, genetics, geography and political economy. "The effect" he says, "of these developing ideas can be recognized in the changing curriculum. Already in 1942 the object of the course was to fit the student primarily to become the educator of the community . . . as members of a specialised branch of the profession with its own status and group loyalty. Each was trained to become the voice of the community in which he was to be a leader and to urge at all times and in all possible ways that man should no longer be crippled by malnutrition, by slum dwellings, by lack of medical care, by social insecurity, and by disorders of personality". One of his most powerful weapons in spreading these ideas has always been the duty imposed upon him since 1870, to write an annual report of his year's work. Simon, in his seven years as medical officer of health of the City of London (1848-55), set an example of good scholarly English with a judicious admixture of figures (Public Health Reports 1887) which has ever since been a model to which many have aspired but few attained.

The present failure to accord specialist status to the medical administrator

Thus, the diploma in public health was the first specialist qualification to be evolved and to be enforced by statute. The Local Government Act of 1888 made it a necessary qualification for any candidate applying for the post of medical officer of health to a county or county district with 50,000 or more

inhabitants, leaving only small urban and rural districts to remain exempt until 1929. Such a happy birth, sturdy growth and manhood found the medical officer of health in 1946, now one of many specialists, a vigorous centenarian, alert to take up new ideas and confident of the nation's continued trust and support, if indeed somewhat apprehensive of the attitude of his colleagues. The course of events has not wholly justified this optimism. Under the National Health Service Act, 1946, the government has devised machinery for determining specialist status (see letter October, 1948); in June, 1949, the Ministry of Health decreed* that doctors taking part in the work of regional hospital boards who are engaged in administration, and to such extent that they are so engaged, shall on that account not be eligible for specialist status. This is a serious blow to administrative medicine, possibly the most grievous yet dealt. The regulation cannot, of course apply to the medical officer of health, who is not an employee of the hospital boards; but it does apply to the medical superintendent of hospitals and to any specialists who give part or all of their time to administrative work. It is bound to reflect upon the medical officer of health also. How came it about, you may ask, that a branch of the profession, with a long-standing specialist qualification, and one which has played such a strong hand in the counsels of the nation should have been placed in such an unenviable position. It is a long story and I hesitate to weary you with it.

The opposition to the Medical Administrator and its cause

An examination of the causes may find what may be called 'the obsolescence of local government' heading the list. When Newman exulted in 1939 (The Building of a Nation's Health; Macmillan) upon the greatness and success of local government which, after a century had gathered into its fold (under the Local Government Act, 1929) the poor law administration, including the duty of administering municipal hospitals, he failed to give due emphasis to the growing dissatisfaction with this form of government. The war seemed to bring this to a head and when peace came again it was evident that most people had lost confidence in the structure and saw little chance of executing the radical boundary alterations which would be necessary to make units of administration capable of handling modern services. When the National Health Service was first suggested many said that the reorganization of local government should be taken forthwith in order to build the new service upon new economic units. The Minister of Health said that this would be too long a process, a decision which has been to some extent borne out by the subsequent inquiries of the Boundary Commission (see letter January, 1948) and in the result new machinery has been created by-passing local government. The decline in status of the medical administrator is thus to some extent a simple expression of the nation's diminishing belief in local government. It has been said, with what truth I do not know, that the Minister of Health no longer favours local government in health matters; in this regard there is a distinction from the Minister of Education, who has always favoured local government for the

*Terms and conditions of service of hospital, medical and dental staff (England and Wales).

education services; parliament gave practical expression to this in the Education Act, 1944. General practitioners too have always resented the 'interference' of local authorities in the free exercise of their work; the duty of making returns and notifications has been irksome and the services for school health and maternity and child welfare have seemed to come between them and their patients. The local authorities were almost the first contact which the general practitioner had with the 'State' and he didn't like it. He did not, unfortunately, ask himself what was the alternative, and whether the relatively humane and understanding approach of a locally elected body, and an executive professional colleague, might not be replaced by something even less to his liking. Hospital consultants, as they grew and developed in many and varied specialties, resented the 'domination' of medicine by the medical officer of health, who seemed to carry so much weight and influence in the nation's affairs.

In the hospital world the new municipal hospitals which developed under county councils and county borough councils after the 1929 Act threatened the superiority of the voluntary hospitals, so long entrenched in the public esteem and from which the consultants had obtained prestige; the development of a different system of administration for municipal hospitals under a medical superintendent was from the first misunderstood and the medical superintendent, instead of being regarded as the colleague and ally of the specialist, and all doctors and nurses working in the hospitals, seemed to many to be an enemy. This was aggravated by the failure of the municipal hospitals to establish medical advisory committees comparable with those long established in voluntary hospitals. No one stopped to think that the municipal hospitals were only just in process of development and that such committees would develop as their value became appreciated. Perhaps one of the most serious developments had its origin in the continuance of the poor law lay administration in county councils and county borough councils; thus the poor law, as it expanded into welfare, presented an aspect of social medicine divorced from the medical officer of health. Under the National Assistance Act, 1948, this lay administration has been perpetuated in most counties in its extended form, which includes the welfare of handicapped persons (see letter July, 1948) and under the Children Act, 1948, a further form of social medicine, the care of the homeless child, has been handed to another lay colleague, the children's officer. There is little doubt that this development has been fostered by our colleagues the lawyers who, as town and county clerks, have preached a doctrine that professional men, including doctors, are not trained to act as business managers of departments; there has been the implied suggestion that the clerk himself should administer all services.

The position of Medical Administrators immediately before the 1946 Act

That, in a nutshell, is a description of the forces at work against the medical administrator. They were understandable forms of opposition which arise in all free societies to pull down the strong and limit his powers for good or evil. They were of value in that they promoted discussion and forced the medical

officer of health and the medical superintendent and others engaged in medical administration to consider their conduct; it was important that they should retain a humble outlook and avoid the perils of the dictatorship mind; in the circumstances that their administration was extending to cover a unified medical service. Such controversy was certainly not regarded as a danger, for much of it was neutralized in sectional interests, and the medical officer of health saw a rosy future for himself, and, as he thought, for the public who would benefit from a service with curative and preventive medicine integrated on the basis that prevention is better than cure. This, after all, had been the treasured dream of Newman, one of our most eminent chief medical officers at the Ministry of Health, whose belief in local government was only equalled by his parallel belief in the need to join curative and preventive medicine together. In consequence, graduates leaving hospitals embarked upon the diploma of public health, a year's postgraduate study, with enthusiasm and a conviction that the future of medical administration had much to offer in service and honours, and no doubt in status and emoluments. Nor was the prospect dimmed by the long negotiations which followed the Beveridge Report on Social Security (1943); if there were to be a state service it seemed almost certain that the government, with a ready-made and well-tried administrative machine to hand, would ask the major local authorities to undertake it. In 1945, following prolonged negotiations with the British Hospitals Association (of voluntary hospitals), the British Medical Association (speaking for general practitioners and consultants), the Municipal Corporations Association and the County Councils Association, the 'caretaker' government had decided to take this step. Local authorities were to undertake the administration of comprehensive services with the superimposing or regional planning authorities and with a central body to deal with the finances of the general practitioner (and thus save him from becoming an employee of the local authorities). It is popularly said that this arrangement would have formed the basis of the Bill about to be placed before parliament at the moment of its dissolution. In the words of the new Minister of Health it was placed 'in the discard', which we understand to mean the waste paper basket. The course of events since then is well known to you all. Hospitals and all institutions and the control of specialists removed to the state; the division of health into three parts; the Nemesis of local government as we have known it since 1888 and, who dare say it, the beginning of the end of medical administration.

The present position of Medical Administration

The fate of medical administration in England since the 5th July of last year is worth a moment's study, for it has far-reaching implications for medicine everywhere. One of the effects of the concentration of medicine upon individual health has been to produce a dislike among doctors for work in a wider field and in the give and take of the nation's business life. If we couple with this the fact that advances in social medicine have not seldom come from the enthusiasms of laymen, it is not unlikely that here is to be found the root cause of the development of lay administration within the medical field. This

was almost certainly true of the health administration of the central government, which Chadwick did so much to build up; the appointment of doctors to the central staff was somewhat grudgingly conceded to be necessary and the first Board of Health (under the 1848 Act) did not at first have any doctor upon it ('two Lords and a barrister to preserve the health of the living, and then, after a year or so of doubtful success, a physician called in to bury the dead'). MacNalty, in his Fitzpatrick lectures, writing of the central health department, referred to 'medical subordination to lay direction' which he generously pronounced 'was not so detrimental as it might have been' because the ability and influence of the medical officers were sufficient to preserve 'harmonious relations with the lay administrators'. And in the case of voluntary hospitals the doctors who gave part of their time to the service of the patients never seemed to regard the day-to-day work to regulate the general conduct and planning of the whole institution as having anything to do with them, and they were satisfied to sit upon a committee advising the hospital governors. It was this idea, that the profession could secure all the control it wanted by sitting on a committee (which had its origin in the voluntary hospital), and not by one of their members occupying the executive chair, that seems to have exerted a great influence upon the framework of the new Act. In executive councils, regional hospitals boards and management committees doctors abound, either by statutory right (as with executive councils) or by the selection of the Minister fulfilling his promise to the profession during negotiation. In supporting this arrangement the profession placed too much confidence in the continuance of happy relations between executive and committee, which flourished in the atmosphere of freedom to buy and spend, such as existed in voluntary hospitals, without the slings of government auditors or the arrows of the treasury to disturb the peace. Moreover, it was overlooked that the value of medical membership of committees depends, broadly speaking, upon the regularity of attendance and it was one thing to give adequate attendance to the medical committee of the local voluntary hospital and quite another to the main committee, and to the wide range of sub-committees, of such powerful state bodies as have now been created. Within a year doctors no longer attend meetings with regularity and it seems likely that in due course the treasured right to membership will have ceased to have much meaning and that the lay executive will be left in undisputed control.

There is little doubt that the new machine is falling rapidly under lay control. At the regional board level administrative direction is shared between a senior administrative medical officer (technically the senior officer) and a lay secretary. The position of the medical officers of the new boards has been affected by the natural development of civil service machinery in what is to all intents and purposes a state machine; the boards operate largely under the direction of Whitehall and directives proceed from the lay secretaries at the centre to their opposite numbers at the periphery. Thus, this new type of administrative medical officer finds himself in a position far different from that of the medical officer of health of before July 5th from whom he took over so many functions. Each regional hospital area is sub-divided into a number of

management committee areas covering groups of hospitals (23 in the Leeds region, see letter August, 1947) and each such committee has a lay secretary with no medical adviser or executive officer. The medical superintendent of the municipal hospitals is placed below the lay secretary of the hospital group in which he works; he has been denied specialist status and pay. Finally, the general practitioner service (see letter April, 1949) has no medical direction. That this is a conscious operation few have much doubt. 'Prejudice against the expert is a venerable tradition of the English public service', as Harley Williams said in 'A Century of Public Health' (Black, 1932). Simon was one of the first to break through this barrier. Since then it is important to realize that the expert medical man, as medical officer of health, has worked under the direction of a lay committee in whose hands the real administrative responsibility has lain. This is entirely in keeping with the old tradition. Nevertheless, the heresy previously mentioned that professional men do not make good business heads, even in this defined position, has been gaining ground, and the prophet is still to be found who can explain convincingly that a health service cannot be run as a business. Where success depends upon the sum total of work of professional men and women, it will only come about in conditions congenial to their work and in an atmosphere of confidence that those with executive power understand their needs. That many lay administrators can achieve this cannot be doubted but it is equally true that the best chance of doing so must be with administrators who have made a study of medicine and the special aspects of medical administration. When the British Medical Association said to the Minister during the negotiations "do what you like with us but don't give us to the local authorities", there began a train of events which may destroy the peace and happiness of the profession. How much better had we proclaimed an unbreakable resolution to be ruled administratively by men and women trained in our own profession who can best be relied upon to handle our affairs with sympathy and understanding; it is these attributes which prevent frustration and inhibitions; when they are absent in those controlling the administrative machine good doctoring becomes increasingly difficult. Moreover, such training is valuable if not essential to ensure that the development of services shall be effective and balanced; for to plan, or even to operate, a medical service without a knowledge of medicine can be a most unbusiness-like operation.

The future of Medical Administration

It is always difficult to peer into the future and the present fog which has enveloped the world of medicine since July 5th, 1948, has not yet dissipated sufficiently to say anything with confidence. Much will depend upon the future of public health, which is a subject of such complexity that I prefer to deal with it in a separate letter. Much will also depend upon the profession itself. Will doctors come to realize that their welfare demands that their day-to-day affairs shall be handled by one of themselves? Is it possible that the management committee of groups of hospitals can fail to see that the planning of good and efficient services requires a medical training which a lay secretary

lacks? I don't know the answer. Common sense suggests that it is only a question of time before this need is recognized, but in the meantime may not the race of medical superintendents die out? Will medical administrators at the regional hospital board level succumb to the deadening influence of a state lay-administered machine? Above all, what will be the attitude of the public to the expenditure of £300 millions a year should they come to believe that the new and expensive machine is not directed by the highest medical skill? These are questions I cannot answer.

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POLIOMYELITIS AMONG ESKIMOS

ELSEWHERE in this issue are printed two papers describing studies carried out in connection with a most interesting outbreak of poliomyelitis in the far north of Canada. The first paper presents the epidemiological features as far as they are known at the moment. It must be realized that this enquiry was conducted under exceptional difficulties, and that the complete tracing of cases in the "frozen north" is impossible. It is very greatly to the credit of the medical officer at Chesterfield Inlet, mounted police constables, and the team flown to this settlement, that so much accurate information has already been assembled. It is understood that enquiries are still in progress, and that a fuller report will appear at a later date. Much interest has already been taken by workers in the United States and elsewhere in newspaper accounts of this outbreak, and it is satisfying that a preliminary scientific report is now available, even though a complete analysis must await a more detailed description. The second paper in the series describes the isolation of typical poliomyelitis virus from five selected Eskimos involved in the Chesterfield Inlet district. This paper may be regarded as final, as the identification of the virus has been established beyond reasonable doubt. It is the intention in this brief commentary to draw attention to some of the more interesting epidemiological features described in the first paper.

The outbreaks of poliomyelitis here described occurred in an isolated part of the subarctic where, in winter, travel is mainly carried out by dog team, and the communities are isolated to a considerable degree. A unique opportunity was therefore afforded for tracing possible sources of infection, and several such were brought to light. The evidence is in full accord with the modern concept of poliomyelitis as a disease of high communicability spread by contact between humans. The infection appears to have travelled first from the Churchill district to Eskimo Point, and then to Chesterfield Inlet. There is no evidence that any extra-human source of infection was operative. At least one of the persons (Gibbons) incriminated as a possible source of infection can be regarded as a convalescent carrier. The interesting point here is that he appears to have remained infectious for at least three or four weeks after the onset of

his acute illness. Hitherto, the idea that convalescents remain infectious thus far into the period of recovery has seldom been entertained seriously, and this is reflected in current isolation regulations. Gibbons was presumably infectious by means of faeces, rather than droplets, as the virus is known to persist in the faeces for several weeks, whereas it can only be recovered from the pharynx for a few days.

A missionary who visited the cases at Eskimo Point subsequently flew to the more northerly settlement of Chesterfield Inlet, and the disease broke out here within 17 days of his arrival. This man visited Eskimos in their igloos, Eskimos sick in the local hospital, and the 25 white residents; the evidence incriminating him as the source of infection of all these persons is strong. However, a complicating factor here is that several Eskimos from outlying camps visited Chesterfield about this time, and could also have imported the virus. The missionary must have been a healthy carrier, as there is no history of poliomyelitis, but it is of course possible that he may have suffered from a mild abortive type of illness not recognized as poliomyelitis. The first sickness developing in Chesterfield seems to have been of the abortive type, and it is from these cases that certain Eskimo visitors may have acquired their infection. Cases of paralytic poliomyelitis began to break out in Chesterfield and outlying camps not long after the missionary completed his visit, at approximately the same time. One recalls the widespread outbreak on the island of Mauritius where, in a very different climate, there was a similar puzzling widespread dissemination of infection in a short time. The investigators of this island outbreak postulated a wave of infection of the upper respiratory tract with poliomyelitis virus, with a subsequent wave of paralytic cases; the initial infection was often characterized by the symptoms of an "illness of infection". It would appear that a similar state of affairs may have been present in Chesterfield, with droplets acting as the means of transfer of the virus.

Another interesting feature was the relatively even distribution of paralytic cases among all Eskimo age groups, except in those aged 0-4, which group was almost spared. No paralytic cases occurred in the 25 whites at Chesterfield, but there were 5 probable cases of abortive attack. It is doubtful therefore whether there was any real difference in the incidence of clinical poliomyelitis in whites and Eskimos. One is again confronted with the thesis that implantation of virus in the body is only part of the story in the pathogenesis of poliomyelitis. What determines the production of paralysis as a sequel to this implantation is unknown. It is generally believed that the development of paralysis is an exceptional occurrence in persons infected with the virus, but one of the novel features of the disease in Chesterfield was the very high incidence of paralysis in exposed Eskimos, almost 20 per cent.

If it can eventually be established what factor or factors determine the development of paralysis after implantation of virus in the body, a tremendous step forward will result. Some workers think that warm weather increases the susceptibility of the ganglionic nerve cells to invasion and destruction, yet the temperature at Chesterfield Inlet was about minus 30°F. Others postulate that excessive fatigue in the incubation period is a factor tending to increase

the incidence of paralysis. Considering all the details of the outbreak at Chesterfield Inlet at present available to us, and in the light of what is already known, it would seem that immunity mechanisms probably play a predominant role in determining the outcome of implantation of poliomyelitis virus in the body.

It may be postulated, as a basis for further discussion of this instructive outbreak, that the strain of virus introduced into the settlement of Chesterfield Inlet was one to which the white residents had a degree of resistance sufficient to prevent attack on the ganglionic nerve cells; in 5 instances this resistance was not complete, and a mild abortive attack ensued. The resistance in the Eskimos was of a lesser degree, as about a fifth of them became paralyzed.

The varying degrees of resistance to poliomyelitis virus exemplified in this outbreak are probably dependent upon varying degrees of previous exposure and resulting immunity. In this connection, of considerable importance is the antibody that develops after contact with the virus. The importance of this specific antibody in determining resistance to inoculation in vaccinated monkeys has been suggested by the work of the Johns Hopkins group at Baltimore, and it is probably no less important in man. It is possible that specific antibody in the mucous secretions of the human body may be a first line of defence against invasion by the poliomyelitis virus, antibody in the blood serum may constitute a second defence, while antibody in the tissues of the central nervous system is the last or innermost defence. It is not difficult to see that diminution in antibody level in one or more of these sites might be instrumental in tipping the scales in favour of the virus, permitting its entry, and facilitating its subsequent development in the body. According to this line of reasoning, the degree of resistance of the body plays a considerable part in determining the type of sickness that results on exposure to virus.

It is to be hoped that the epidemic at Chesterfield Inlet will expend itself, and that restriction of travel will serve to limit the spread of infection. Otherwise it is to be feared that many more communities will become involved.

A. J. Rhodes.

NEWS

British Columbia

DURING THE MONTH OF SEPTEMBER the Provincial Health Unit Directors held their quarterly Health Officers Meeting. This meeting was attended by all unit directors from the various parts of the Province.

DR. W. A. MCINTOSH, Canadian Representative, and Dr. Hugh Smith, Regional Director for Canada, U.S. and Mexico of the International Health Division, Rockefeller Foundation, visited British Columbia during October. They took the opportunity to study the health services of the Provinces and the Metropolitan centres of Vancouver and Victoria. During their stay they met with the Hon. G. S. Pearson, Minister of Health and Welfare, to discuss the hospital insurance program and other matters.

DR. CHARLES HUNT, formerly physician in charge of clinics with the Division of V.D. Control, becomes director of the Division, replacing Dr. G. R. F. Elliot, who is in charge of the Health Survey for the Provinces.

MR. PAUL NERLAND, a recent graduate of the University of British Columbia, has joined the staff as a health educator with the Division of Health Education.

Alberta

MR. J. BUTTERFIELD, a member of the sanitary engineering division staff for over thirty years, retired on September 21st. Mr. Butterfield joined the department in 1919 and has been instrumental in advancing the status of the department to the position which it now enjoys. At the time he entered the health field, public health work was under the direction of the Municipal Affairs Office. The Health Department was formed in 1922 and Mr. Butterfield was among the first sanitary inspectors employed. During the years 1931-35 he was loaned to the Foothills and Red Deer Health Units for the purpose of organizing sanitary services.

COL. E. R. KNIGHT, business superintendent of the Central Alberta Sanatorium, resigned from the staff of the institution at the end of September. Col. Knight has completed thirty years of service as administrative officer for the sanatoria of this province. He entered this work in the sanatorium in Frank in 1919 and in 1920 transferred to Central Alberta Sanatorium. Mr. Donald A. Grant has succeeded Col. Knight as business superintendent.

THE NEW RECREATION BUILDING at Central Alberta Sanatorium was officially opened on September 26. This building will provide recreation facilities for both patients and staff. It includes a stage, auditorium and moving-picture equipment.

MISS THELMA MCKENZIE, Reg.N., B.Sc., has replaced Miss M. Ries on the staff of the health unit in Stettler. Miss Ries has left for Grass Land to do district nursing. Miss Vera Gines, Reg.N., P.H.N., has left the Stettler Health Unit to take a similar position with the Edmonton Rural Health Unit. Miss J. McKay, who has replaced her at Stettler, has just completed the B.Sc. course at the University of Alberta.

Saskatchewan

MISS OLGA H. ANDERSON, who was appointed director of health education on September 1, is a graduate of the Universities of Manitoba and North Carolina and holds the degree of M.S.P.H. from the latter university. She was formerly senior nutritionist for the Manitoba Department of Health and Public Welfare.

A LEADERSHIP TRAINING INSTITUTE, sponsored by the Public Service Commission and the Division of Adult Education, was held at the Qu'Appelle Valley Centre, Fort Qu'Appelle, Sask., from August 27 to September 3. This Institute was conducted in an endeavour to discover more effective ways of dealing with group work activities. Several officials of the Department of Public Health attended and participated in the discussions.

SIX STAFF MEMBERS of the Division of Sanitation wrote the examination for the certification of sanitary inpsectors held in Regina from September 14 to 16. This examination is sponsored by the Canadian Public Health Association and is conducted in each province by a local board appointed by the C.P.H.A. of which Mr. J. G. Schaeffer, Director of the Division, is the provincial chairman.

ONE HUNDRED AND FORTY DELEGATES attended the first convention of the Western Canada Water and Sewage Conference held in Regina on September 26 and 27. This is a new organization formed to serve those who are interested in water and sewage problems and who are resident in the three prairie provinces and that portion of Ontario extending from Port Arthur to the Manitoba border.

MISS DOROTHY HAGAR joined the staff of the Nutrition Division in September as assistant to the Provincial Nutritionist. In October Miss Frieda Meyers will be assigned to nutrition field work in Health Region No. 13, North Battleford, for the next few months. This will be the second health region to be served by a nutritionist, as Miss Eleanor Monan is at present acting in the same capacity in Health Region No. 6, Moose Jaw.

Manitoba

RATEPAYERS in two adjoining areas in Manitoba will vote October 21st on the establishment of local hospital districts. If the vote gets a three-fifths majority it will mean that a total of 21 hospital and medical nursing unit districts have been organized in this province under the Health Services Act of 1945. The districts under consideration are Neepawa and Gladstone, with a total of 17,000 people. The plan for Neepawa includes a new 30-bed hospital and a six-bed medical nursing unit, at an estimated cost of $200,000 of which $96,000 will be provided by grants. The Gladstone District would provide a new 16-bed hospital and two four-bed nursing units. The cost here is estimated at $150,00 of which $67,000 will be met by grants.

FOR THE FIRST TIME in Manitoba, a qualified health educator has been appointed to work on the local level. Miss Janet Marie Alford was posted to a local health unit—the Red River Unit—October 1st just after she returned from Chapel Hill, North Carolina, where she received her M.S.P.H. degree. Miss Alford is a graduate in home economics from the University of Manitoba and previously worked with the Department of Health and Public Welfare as a nutritionist.

DR. IAN BROWN has been granted 18 months' leave of absence from his duties as staff physician at the Selkirk Hospital for Mental Disease to take up residency at the Institute of Living at Harvard. He will be studying psychiatry in preparation for the American Board examinations. Dr. Brown was appointed to the hospital staff several yeras ago when he came to Canada from Glasgow, Scotland.

THE 351 STUDENTS at the Manitoba Normal School were given a complete physical examination the first week in October by a team of doctors, a dentist, two nurses, and a laboratory technician from the Department of Health and Public Welfare. The students organized the health survey and assisted the doctors as a practical part of their health education course. This school is the only residential Normal School in Canada, and is one of the few to have a full-time health instructor, Miss M. E. Ring, with as many lecture hours as any other teacher.

PRACTICAL NURSES in Manitoba have been granted a 16 per cent increase in fees. Under an order-in-council they are now allowed to charge $4.15 for an eight-hour day instead of $3.60, the minimum set previously. Forty-six practical nurses graduated at the end of August from the Central School for Practical nurses in Winnipeg and the St. Boniface School.

GEORGE NICK, senior field supervisor for the Physical Fitness and Recreation Division of the Department of Health, is studying at the University of Toronto for a Bachelor's degree in Health, Physical Education and Recreation.

DR. JOHN NELSON, medical director of the Northern Health Unit with headquarters at Flin Flon, has accepted a position with the British Columbia Department of Health in the Venereal Disease Control Division. Dr. Nelson came to Flin Flon from Glasgow, Scotland.

A CLASS OF eight student sanitary inspectors has completed the course held at the Section of Environmental Sanitation, Department of Health and Public Welfare, and the students have written the examinations in sanitary inspection conducted by the Canadian Public Health Association.

EXACTLY $300,000 was mailed during September from the provincial treasury to 161 municipalities in Manitoba. The payments were provided by the terms of the

Manitoba Social Assistance Act which was passed at the last session of the legislature. The funds will be used for relief and child welfare.

MR. DON HENDIN, research assistant in the Industrial Hygiene Laboratory in Winnipeg, has gone back to the University of Manitoba to complete his studies. He was engaged in the study of nitrate in Manitoba ground water, working under a federal public health research grant.

MR. L. A. KAY, Public Health Engineer, attended the first annual meeting of the Western Canada Waterworks and Sewage Conference in Regina, Saskatchewan. He is a director of this new organization which convened at the end of September.

Ontario

EFFECTIVE APRIL 1ST, Dr. J. B. McKay, formerly pathologist at the Belleville General Hospital, Belleville, Ontario, assumed the duties of pathologist in the Division of Laboratories, Department of Health, Province of Ontario. Dr. McKay is a graduate of the University of Western Ontario. He will be in charge of the surgical pathological service at the central laboratories, Parliament Buildings, Toronto, and also of post-mortem examinations for the mental hospitals in central Ontario.

TO FACILITATE the handling of matters pertaining to National Health Grants, the Department of Health of Ontario has set up an advisory committee comprised of four officers of the department.

MISS HELEN FASKEN has been appointed supervisor of public health nursing in the Wellington County Health Unit, with headquarters in Fergus.

MISS NORAH CUNNINGHAM has been appointed supervisor of public health nursing in the Huron County Health Unit, which was established last July.

Quebec

THE INSTITUTE OF MICROBIOLOGY AND HYGIENE of the University of Montreal has been allotted money from the federal health grants to equip a new virology section in its laboratories. The grant of nearly $6,000 will be spent on scientific equipment, instruments, glassware and other supplies required to equip the laboratory.

DURING SEPTEMBER ten public health nurses were appointed in various county health units of the province.

Newfoundland

IMPROVED HEALTH SERVICES for the south coast of Newfoundland are in prospect with the approval of a grant of more than $61,000 from federal health funds which have been earmarked to pay part of the salaries of two doctors to be located at Rose Blanche and Hermitage. They will provide medical services for their districts and in addition will be responsible for public health programs of immunization, child care, sanitation and the prevention of illness generally. Four diesel boats will be obtained for the two new doctors at Rose Blanche and Hermitage and for the two already practising at Burgeo and Belleoram.

"Arthritis—Plan for Attack"

A sixteen-page booklet, "Arthritis—Plan for Attack", has been published by the Canadian Arthritis and Rheumatism Society. Prepared with the advice and approval of the Society's Medical Advisory Board, the pamphlet presents a plan for a concerted attack upon the rheumatic diseases and discusses the role of the Canadian Arthritis and Rheumatism Society in co-operation with the medical profession, health and hospital authorities, medical schools, and the general public. Copies of the booklet are available without charge from the Society, 74 Sparks Street, Ottawa.

Appointment of Miss Mildred Walker as Nursing Consultant in Industrial Hygiene

MISS MILDRED WALKER, Reg.N., B.S., M.A., has been appointed nursing consultant with the Division of Industrial Health, Department of National Health and Welfare, Ottawa. She assumed her duties on October 1st. Miss Walker goes to this position with exceptional preparation. She received her basic training at the Victoria Hospital, London, and her certificate in public health nursing from the University of Western Ontario, London, and then went on to obtain the B.S. degree in supervision in public health nursing and the M.A. degree in personnel administration in nursing from Columbia University, New York. Since 1948, Miss Walker has been supervisor of nursing service, Health Centre, Phillips Electrical Company, Brockville.

EMPLOYMENT SERVICE

Advertisements regarding "positions available" and "personnel available" will be published in from one to four consecutive issues, depending upon the requirements of the agency or person concerned. They are limited to seventy words or less, with a confidential box number if desired. There is no charge for this service to members of the Association. Health agencies are charged a flat rate of $10.00 for the advertisements (up to our consecutive issues) and for the service. The rate for non-members is $5.00. The service includes confidential clearing of information between prospective employer and employee if desired.

Public Health Nurses Wanted: (1) Generalized program in semi-urban area close to large centres. (2) Initial salary $1,800 with adequate allowance for experience. (3) Annual increases. (4) Generous transportation allowance with assistance in financing purchase of cars. Would consider applicants without cars. (5) Workmen's Compensation and Blue Cross Hospital Plan. (6) Four weeks' vacation with pay. (7) Where desired, Unit will arrange personal interview. Apply to Miss Margaret Maxted, Secretary-Treasurer, Halton County Health Unit, Milton, Ontario.

Public Health Nurses wanted for generalized program. Initial salary $1,900.00 with adequate allowances for experience. Annual increases. Generous transportation allowances. Would consider applicants without cars. Arrangements for purchase of cars can be made. Generous vacation time. Workmen's Compensation and Blue Cross Hospital Plan. Apply to John R. Coleman, Secretary-Treasurer, Simcoe County Health Unit, Court House, Barrie, Ontario.

Wanted: Young, capable, energetic doctor to take over and develop new Department of Industrial Medicine in expanding Clinic in Western Canada. Salary according to age and specifications. Box No. 14, Canadian Public Health Association, 150 College Street, Toronto 5.

Kent County Health Unit, Chatham, Ontario: Vacancy on staff of two for junior sanitarian. Generalized urban and rural sanitation program with full responsibility. Starting salary $2,000 to $2,300, depending on experience, with annual increment of $100. Travel allowance of 8 cents per mile, amounting to usually about $100 per month. Apply—Director, Dr. Roger Knipe.

Wanted—Medical Director for New Waterford Medical Co-operative. To supervise work of a co-operative medical society in mining and farming community, Nova Scotia, with population of 15,000. Salary $12,000. For particulars, apply to: A. S. MacIntyre, Managing Director, Nova Scotia Co-operative Union, Antigonish, N.S.

SEVENTEENTH ANNUAL CHRISTMAS MEETING
LABORATORY SECTION
CANADIAN PUBLIC HEALTH ASSOCIATION
Royal York Hotel, Toronto
December 16 - 17, 1949
For hotel reservations, write the
Canadian Public Health Association, 150 College Street, Toronto 5.